CW#11H: Midpoint

Honors Geometry

September 21ST, 2015

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

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| Pre-work: In your notebooks define: midpoint, bisect, and segment bisector. | |
| 1. How far is Point A (3,5) from Point B (9,5)? | 2. How far is Point F (2, -4) from Point H (2, 5)? |
| 3. Point X is the midpoint of . What are the coordinates of Point X? | 4. Point Y is the midpoint of . What are the coordinates of Point Y? |
| EXPLAIN: How did you find your answer to problems 3-4? | |
| 5. Plot Point E (1,1) and Point G (7,5) on the graph below. What is the midpoint of ?  HOW did you find your answer? Provide a written explanation.   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |

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| 6. Find the midpoint of A(6, 5) and B(-2, 4). | 7. The endpoints of PR are *P*(–2, 5) and *R*(4, 2). Find the coordinates of the midpoint *M*. |
| 8. The midpoint of XY is *M*(1, 1).  One endpoint is *X*(l, 6). Find the coordinates of endpoint *Y*. | 9. The midpoint of AC is *M*(3, 4).  One endpoint is *A*(l, 6). Find the coordinates of endpoint *C*. |

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| CHALLENGE: (Answer in your notebooks)  1) Teresa encountered this problem: “Find the midpoint if the coordinates of the endpoints are (-4, -10) and (6, 7)”.  She proceeded by adding -4 and -10 and dividing by two for the x- coordinate and adding 6 and 7 and dividing by two for the y- coordinate. Her final answer was a (-7, 6.5). Given that Lucy’s response was incorrect, explain the error in her reasoning. Then find the correct answer.  2) ABCD is a rectangle with vertices A(-3, -2), B(-3, 1), C(4, 1), and D(4, -2). Find the midpoint of the diagonal AC.  3) A rectangle has two diagonals, which are line segments linking opposite vertices (corners) of the rectangle. The diagonals of a rectangle are congruent and bisect each other. The diagonals intersect each other at (1, -1). Find the opposite vertex to W(0, 6).  4) A triangle has vertices A(0, -2), B(4, 4) and C(6, -2). A median of a triangle is a line segment from one vertex to the midpoint of the opposite side. For example, A is a vertex and AD is the line segment that bisects BC. Find the coordinates of the midpoint D that is created by the median AD.  5) With the given endpoints (2,5) and (4,9), what is the equation of the line that goes through the original two points? What is the midpoint? |

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